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25269	7590	02/17/2004	EXAMINER	
DYKEMA GOSSETT PLLC FRANKLIN SQUARE, THIRD FLOOR WEST 1300 I STREET, NW WASHINGTON, DC 20005			KAO, CHIH CHENG G	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/644,982

Applicant(s)

JURGEN, ZIMMERMANN

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14, 16, 17 and 19-22 is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 18 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☒ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8/21/03. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 2/21/2001. It is noted, however, that applicant has not filed a certified copy of the 10108296.7 application as required by 35 U.S.C. 119(b).

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following feature(s) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim 1: a system, a digital sensor of a dental x-ray apparatus to be determined and/or positioned, an input and output device, a first storage area, a second storage area, a processing unit, and means for indicating the sensor and positions of the sensor.

Claim 2: a user interface

Claim 5: a computer interface to the x-ray apparatus

Claim 6: a computer interface as recited in this claim

Claim 12: a template specifying a digital x-ray sensor comprising a frame of transparent material

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: #7'. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use. Please note the missing heading, "DETAILED DESCRIPTION OF THE INVENTION".

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).

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(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

5. This application does not contain an abstract of the disclosure as required by 37

CFR 1.72(b). An abstract on a separate sheet is required.

### *Claim Objections*

6. Claims 1-4, 6, 13, 15, and 18-20 are objected to because of the following informalities, which appear to be minor draft errors creating grammatical or lack of antecedent basis problems: (claim 1, line 1, "of dental"), (claim 1, line 4, "the digital image"), (claim 1, line 4, "the area"), (claim 1, line 8, "the template image"), (claim 1, lines 8-9, "at least one sensor"), (claim 1, line 10, "created the area"), (claim 2, lines 2-3, "the template image"), (claim 3, line 2, "comprising in that"), (claim 4, line 3, "the template image"), (claim 6, line 3, "the patient"), (claim 13, line 1, "of dental"), (claim 13, lines 2-3, "the sensor image"), (claim 13, line 4, "the X-ray image"), (claim 13, line 5, "the patient"), (claim 13, line 6, "the area"), (claim 13, lines 6-7, "is specified, a third..."), (claim 15, line 2, "of dental"), (claim 15, line 4, "the X-ray image"), (claim 15, line 5, "the patient"), (claim 15, line 8, "the area to be X-rayed"), (claim 15, line 9, "the template"), (claim 15, line 10, "the imaging area"), (claim 15, lines 10-11, "the template"), (claim 18, line 1, "A method for"), (claim 18, line 2, "comprising, a first"), (claim 18, line 3, "an image, and a"), (claim 18, line 4, "the sensor"), (claim 18, line 5, "the respective image"), (claim 19, line 1, "wherein that the"), (claim 20, line 2, "making the images"), (claim 20, line 3, "the respective X-raying situation"), (claim 20, line 4, "the operation"), and (claim 20, line 5, "the selection").

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The following respective suggestions may obviate the objections above: (claim 1, line 1, inserting - -a- - before “dental”), (claim 1, line 4, replacing “the” with - -a- -), (claim 1, line 4, replacing “the” with - -an- -), (claim 1, line 8, inserting - -at least one- - before “template”), (claim 1, lines 8-9, replacing “at least one” with - -the- -), (claim 1, line 10, inserting a comma after “created”), (claim 2, lines 2-3, inserting - -at least one- - before “template”), (claim 3, line 2, replacing “comprising in that” with - -wherein- -), (claim 4, line 3, inserting - -at least one- - before “template”), (claim 6, line 3, replacing “the” with - -a- -), (claim 13, line 1, inserting - -a- - before “dental”), (claim 13, lines 2-3, replacing “the” with - -a- -), (claim 13, line 4, replacing “the” with - -an- -), (claim 13, line 5, replacing “the” with - -a- -), (claim 13, line 6, replacing “the” with - -an- -), (claims 13, lines 6-7, inserting “and” after the comma), (claim 15, line 2, inserting - -a- - before “dental”), (claim 15, line 4, replacing “the” with - -an- -), (claim 15, line 5, replacing “the” with - -a- -), (claim 15, line 8, replacing “the” with - -an- -), (claim 15, line 9, inserting - -selected- - before “template”), (claim 15, line 10, replacing “the” with - -an- -), (claim 15, lines 10-11, inserting - -selected- - before “template”), (claim 18, line 1, inserting a comma after “method”), (claim 18, line 2, deleting the comma recited above), (claim 18, line 3, deleting the comma recited above), (claim 18, line 4, inserting - -at least one- - before “sensor”), (claim 18, line 5, replacing “the” with - -a- -), (claim 19, line 1, deleting “that”), (claim 20, line 2, deleting “the”), (claim 20, line 3, replacing “the” with - -a- -), (claim 20, line 4, deleting “the”), and (claim 20, line 5, deleting “the”).

For purposes of examination, the claims have been treated as such. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 3, 4, 13, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 3, the phrases “capable” and “preferably” render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

Regarding claim 4, the phrase “capable” renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claim invention.

Regarding claims 13 and 15, the phrase “preferably” renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

For purposes of examination, the recitations associated with these phrases will not be read into the claims.

8. Claims 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships include the relationship between a template for specifying a digital x-ray sensor and a shape and size of an x-ray image created using an assigned digital x-ray sensor.

For purposes of examination, the claims will be treated as just a template.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 9, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Spolyar (US Patent 4630375).

Spolyar discloses a template (Fig. 4, #44) having a property making it possible to pass it over an x-ray image (Figs. 5 and 6) comprising a frame of transparent material (col. 3, line 67, col. 4, line 3).

10. Claims 9, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Grostic (US Patent 2557428).

Grostic discloses a template (Fig. 1, #10) having a property making it possible to pass it over an x-ray image (col. 1, lines 46-50) comprising a frame of transparent material (col. 2, lines 36-38).

11. Claims 18 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Shinohara et al. (US Patent 6188744).

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Shinohara et al. discloses a method comprising a first step in which several areas to be x-rayed are selected from an image (Fig. 1, #53 and 57) and a second step in which there is automatic selection and display of at least one sensor suitable for creating a respective image (Fig. 1, #55) along with a data medium, containing a data structure that is capable of running on a computer (Fig. 1, #15) to carry such a method.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara et al. in view of Francke (US Patent 6477223).

13. With regards to claim 1, Shinohara et al. discloses a system (Fig. 1) for determining and/or positioning a sensor (Fig. 1, #33) comprising an input (Fig. 1, #17 and 19) and output (Fig. 1, #13) device, a first storage area, in which an image is saved (Fig. 1, #11, PRCONSTRUCTED IMAGE), a second storage area, in which at least one template image is stored (Fig. 1, #11, ROI1 CT VAL.), and a processing unit (Fig. 1, #15), which places the template image simulatively on the area to be examined of the image (Fig. 1, #13, and Fig. 4, S23) such that when a real x-ray image is created, the area to be examined is depicted completely

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(Fig. 4, S29), wherein the processing unit has means for indicating the sensor and position of the sensor in the digital image (Fig. 1, #13).

However, Shinohara et al. does not specifically disclose a digital sensor.

Francke teaches a digital sensor (col. 1, lines 40-45).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the system of Shinohara et al. with the detector of Francke, since one would be motivated to use one to take an image of the head during computed tomography (col. 1, lines 40-45) as shown by Francke.

14. With regards to claim 2, Shinohara et al. further discloses a user interface (Fig. 1, #13; 17, and 19) enabling interactive selection of the at least one template image and/or area to be examined (Fig. 1, #21).

15. With regards to claim 3, Shinohara et al. further discloses the processing unit specifying that template image which covers the area to be examined as completely as possible (Fig. 1, #13).

16. With regards to claim 4, Shinohara et al. further discloses the processor determining the position of the template image in one or more dimensions (Fig. 1, #13).

17. With regards to claim 5, Shinohara et al. further discloses a computer interface (Fig. 1, #15) via which presettings determined by simulation (Fig. 1, #13 and 55) are transferred, while

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the x-ray apparatus permits creation of a digital image only when the presettings apply (Fig. 4, S27-S37).

18. With regards to claim 6, Shinohara et al. further discloses a computer interface (Fig. 1, #15), via which an existing digital image is transferred to the first storage area (Fig. 4, S17).

19. With regards to claim 7, Shinohara et al. in view of Francke suggests a system as recited above.

However, Shinohara et al. does not specifically disclose a dental x-ray unit.

Francke teaches a dental x-ray unit (col. 1, lines 40-45 and 50-54).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the suggested system of Shinohara et al. with the dental unit of Francke, since one would be motivated to incorporate x-raying the dental area to examine it as implied from Francke (col. 1, lines 40-56).

20. With regards to claim 8, Shinohara et al. further discloses a PC controlled by software (Fig. 1, #15).

21. With regards to claims 9-11, Shinohara et al. discloses a template with a size and shape comprising a property making it possible to pass over an X-ray image (Fig. 1, #13) for a sensor (Fig. 1, #55).

However, Shinohara et al. does not specifically disclose a digital sensor.

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Francke teaches a digital sensor (col. 1, lines 40-45).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the template of Shinohara et al. with the detector of Francke, since these detectors are considered art-recognized equivalents in that they are x-ray detectors for a CT apparatus. It would have been within ordinary skill in the art to substitute one type of detector for another. One would be motivated to use a digital detector to obtain digital signals for further processing which would be useful in computerized tomography as implied from Francke (col. 1, lines 40-45).

***Allowable Subject Matter***

22. Claims 13 and 15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

23. Claims 13-17 and 19-22 contain allowable subject matter.

24. The following is a statement of reasons for the indication of allowable subject matter:

With regards to claim 13, prior art does not disclose or fairly suggest a method for specifying and/or positioning a digital sensor including a third step, during which there is selected, from a plurality of templates each of which is assigned to sensors of a digital X-ray apparatus, that template which covers an area specified in a second step most precisely, in combination with all the limitations in the claim. Claims 14, 16, and 21 contain allowable subject matter by virtue of their dependency.

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With regards to claim 15, prior art does not disclose or fairly suggest a method for specifying and/or positioning a digital sensor including a third step, during which a selected template is moved across an x-ray image for purposes of control and an imaging area appertaining to the selected template is thus revealed, second and third steps being iteratively continued until a suitable combination of sensor and imaging area is displayed, in combination with all the limitations in the claim. Claims 17, 19, 20, and 22 contain allowable subject matter by virtue of their dependency.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
gk  
EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER